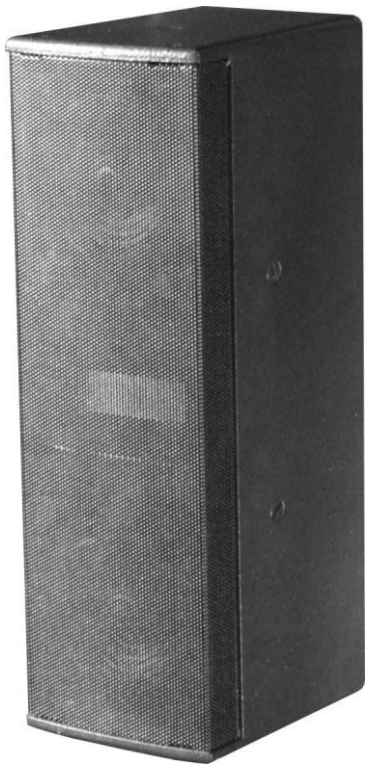
i-2
User Manual – v3.0



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CONTENTS

Introduction

- Thank you — Page 3
- Unpacking — Page 3
- Declaration of Conformity — Page 3

Product Overview — Page 4

System Set-up

- Safety Considerations — Page 5
- Cabling & Amplifier selection — Page 5
- Processing — Page 6

Mounting & Rigging Options

- Stand Mounting — Page 7
- Ground Stacking — Page 7
- Rigging Hardware & Accessories — Page 8
- Permanent Installations — Page 8
- i-2 Rigging Accessories — Page 9

Maintenance — Page 11

Warranty — Page 12

Appendix A – Technical Specifications — Page 13

THIS MANUAL HAS BEEN UPDATED TO APPLY TO i-2 ENCLOSURES WITH SERIAL NUMBERS FROM i2200212/001 onwards

INTRODUCTION

Thank you

Thank you for purchasing the i-2 loudspeaker from EM Acoustics. The i-2 has been carefully designed and rigorously tested to ensure years of flawless operation and unprecedented sonic quality. Designed originally as a theatrical front-fill loudspeaker, the i-2 can also find applications from cafes and bars through to museums, nightclub infills and themed attractions.

Please ensure that you read this manual carefully before use, and that you keep it to hand should you need it for further reference. Furthermore, should you have any difficulties please do not hesitate in contacting your EM Acoustics dealer, or email info@emacoustics.co.uk for further assistance.

Unpacking

Every EM Acoustics product is built to the highest standard and thoroughly tested before it leaves our factory. After unpacking your loudspeaker, please inspect it carefully for any signs of transit damage. If such damage is found, please notify the carrier at once to instigate a claim. It is suggested that you retain all packaging for future re-shipment.

DECLARATION OF CONFORMITY

CE

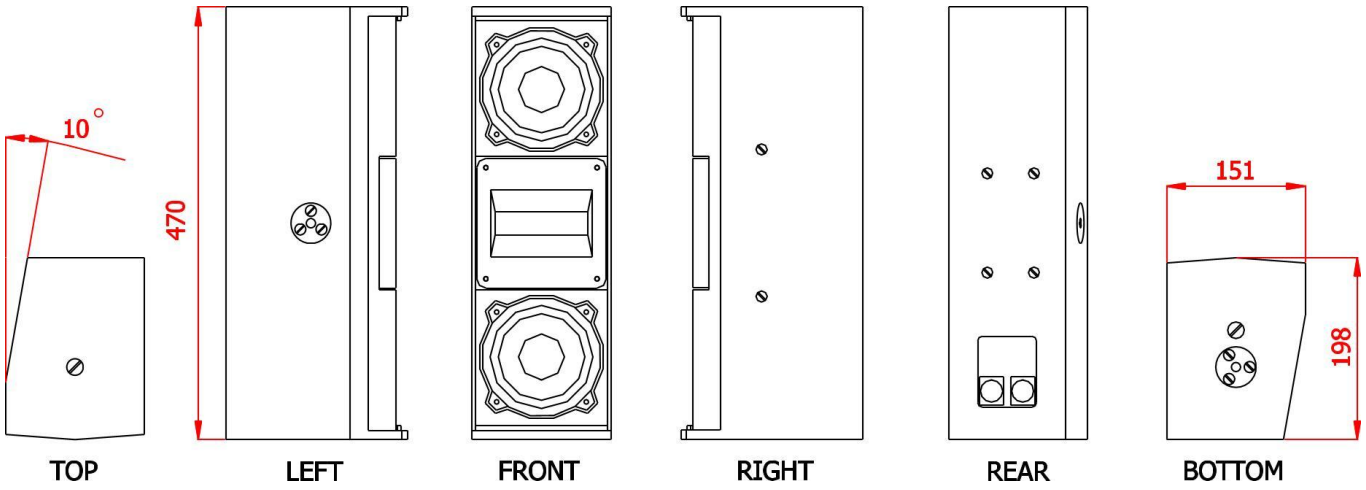
The products contained within this manual conform to the requirements of the EMC Directive 89/336/EEC, amended by 92/31/EEC and to the requirements of the Low Voltage Directive 73/23/EEC amended by 93/68/EEC.

Standards Applied:	EMC	Emission	EN55103-1:1996
		Immunity	EN55103-2:1996
	Electrical Safety		EN60065:1993

RECYCLING

This product and its packaging constitute the applicable product according to the WEEE directive. Please ensure that at the end of the working life of this product, it is disposed of sensibly in accordance with local and national recycling regulations. The packaging supplied with this product is recyclable. Please retain all packaging, however if disposing of this packaging please ensure that you comply with local recycling regulations. These products also all comply to the RoHS Directive 2002/95/EC.

PRODUCT OVERVIEW



The i-2 is an ultra-compact fullrange loudspeaker, designed specifically for applications where controlled, accurate dispersion is required. The use of a 4" x 1" exit planar wave manifold for HF allows the i-2 to produce a coverage pattern of 90° x 30°, which can be rotated to allow use in any orientation. The angled side surface of the enclosure allows for subtle up or down-angle when used on a stage edge or up against a ceiling.

Innovative three-way passive crossover technology creates perfect time alignment between the three components, and avoids the interference lobing normally encountered with such designs.

As with all EM Acoustics products, no external program or equalisation is required for the i-2 to function correctly. However, for higher-SPL applications a high pass filter set above 75Hz is recommended to prevent over-excursion of the low frequency drive units.

A variety of flexible rigging and mounting options are available for the i-2 to ensure the widest variety in applications. See later in this manual for more information.

SYSTEM SET-UP

Safety Considerations

Loudspeaker systems are potentially dangerous objects if used incorrectly. Please ensure that you read this section fully, and contact EM Acoustics or your local dealer should you be in any doubt over correct operation procedures.

Professional loudspeaker systems are capable of producing damage-inducing sound pressure levels, and hence care should be taken when setting your system up, particularly when it comes to loudspeaker placement within a venue. Damage to the ear can result from levels above 90dB under prolonged exposure.

Cabling and Amplifier Selection

The i-2 is designed to be used with professional power amplifiers providing the following power outputs:

i-2 400W/channel **into eight ohms**

It is good practice to use an amplifier power equal to the program power rating of the loudspeaker – so as to retain sufficient headroom and good dynamic range. Care should be taken during operation to avoid amplifier clipping – as this can cause serious damage to your loudspeakers. If in doubt, please contact your dealer who will be happy to assist you in correct amplifier choice and setup.

A small power amplifier working too hard is more likely to damage a loudspeaker than a large power amplifier working within its operating range!

Cabling

i-2 loudspeakers are supplied with Neutrik Speakon™ NL4 connectors, wired pin 1+/1-. The 2+/2- pins are connected to allow link-through with four core cables. It is recommended that the resistance of your cable is less than one tenth of the nominal system impedance. Given below are the recommended maximum cable lengths for different cross-sections and impedances.

Conductor Cross Sectional Area	**Maximum Recommended Cable Length**		
	4 ohms	*8 ohms*	*16 ohms*
1.0mm^2	11m	22m	44m
1.5mm^2	17m	34m	68m
2.0mm^2	22m	44m	88m
2.5mm^2	29m	58m	116m
4.0mm^2	44m	88m	176m
6.0mm^2	66m	132m	264m

Processing

The i-2 incorporates a three-way passive crossover network to split the full-range input signal to the relevant drive units. Under no circumstances should you attempt to disconnect or bypass this network – doing so is likely to damage your loudspeaker.

Like all EM Acoustics products, the i-2 requires no external EQ to function as intended. Depending on the nature of your desired application, you may well wish to use a system processor for delays and room EQ. It is also recommended for higher-SPL applications that a high pass filter should be used – with a minimum of 24dB/Octave Butterworth slope, around or above 90Hz. This will prevent unwanted low frequencies (which the i-2 is not capable of reproducing) from forcing the drive units to over-travel and will avoid damage.

If you are in any doubt whatsoever over correct processor settings, please do not hesitate to contact your EM Acoustics representative or contact us at the factory directly.

MOUNTING & RIGGING OPTIONS

Stand Mounting

The i-2 has two 3/8" threaded fixings for microphone stand mounting. When mounting in this way, please consider the following:

- Ensure your stand height is locked off and the tripod legs are positioned so as to be stable.
- Check the weight loading of your stands before attempting to mount the loudspeaker.
- Do not stack a second loudspeaker on top of the stand-mounted one.
- Ensure cables are run so as to leave enough slack to enable neat wiring, and thus reduce the risk of the speaker being pulled over. Loose cables should be covered or taped down wherever possible to reduce trip hazards.
- If stands are being used outdoors, it may be necessary to add ballast to the base of the stand to prevent it toppling over.

Ground Stacking

- Ensure that the floor or stage surface can withstand the weight of the system.
- Wherever possible, avoid high stacks and use ratchet straps to secure loudspeakers together. Please also remember that vibrations from subwoofer systems can shake other loudspeakers out of place, which may present a toppling hazard. The use of ratchet straps and non-slip material is recommended to prevent this.

WARNING: The overhead suspension of loudspeakers is a very serious issue with potentially lethal consequences should anything go wrong. Rigging should only be carried out by experienced personnel following safe working practice. Should you be in any doubt whatsoever, please contact your local dealer who will be able to refer you to a suitable rigging company.

Rigging Hardware & Accessories

The i-2 loudspeaker has a range of integral rigging hardware to enable usage in a wide variety of ways. A microphone stand can be used to mount the enclosure in either vertical or horizontal formats, whilst the four M6 points on the rear allow permanent installation with Omnimount™ or PowerDrive™ mounting hardware. Two rigging accessories are also available for the i-2 – the YK-i2 vertical hanging yoke, and the YK-i2h horizontal hanging yoke.

Under no circumstances should the mounting points of one enclosure be used to suspend another enclosure below it. EM Acoustics are in no way responsible for the failure of incorrectly rigged systems. This information relates specifically to the rigging techniques for the i-Series enclosures only. If you are in any doubt about safe practices for rigging loudspeakers, please contact your local EM Acoustics dealer who will be able to advise you.

Permanent Installations

Any installation (permanent or temporary) must be securely attached to the structure of the building using chain, steel wire or web straps that are certified and load rated for the loudspeaker system. Consideration must be taken when determining the loading on the structure to include loudspeakers and rigging hardware, and the appropriate safety factor can then be decided upon. **If you are in any doubt whatsoever,** please contact your EM Acoustics dealer who will be able to refer you to an experienced rigging company. A reputable rigging organisation should also be able to advise on legislation regarding safety factors for suspended systems of this type.

Attachment of the YK-i2 vertical hanging yoke

Using a flat-blade screwdriver, remove the two M8 countersunk bolts on the flat side of the enclosure (marked "A" in Fig 1). Position the YK-i2 mounting plate over the two holes, reinstate the bolts and tighten securely. There are three hole positions for an attachment device in the top of the yoke (marked "B" in Fig 2). For permanent installation, these can be used to fix the YK-i2 directly to a surface. For temporary installation, a standard hook clamp is recommended. Attach this clamp or other suitable device using an M10 bolt, nut and washer set. The i-2 can now be securely suspended and oriented as required. By rotating the YK-i2 through 180 degrees, it can be used to allow down-tilt or up-tilt when using a microphone stand (Fig 3).

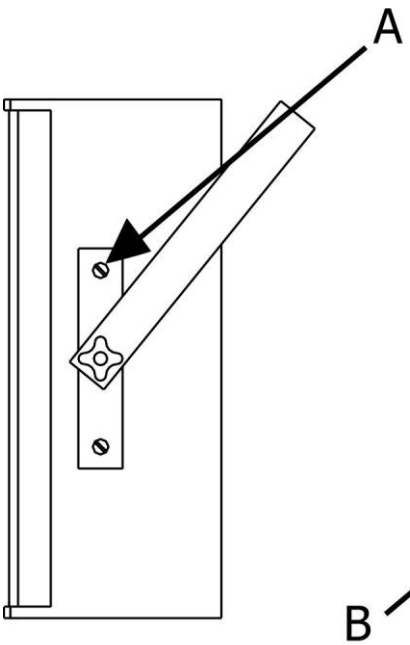


Fig 1

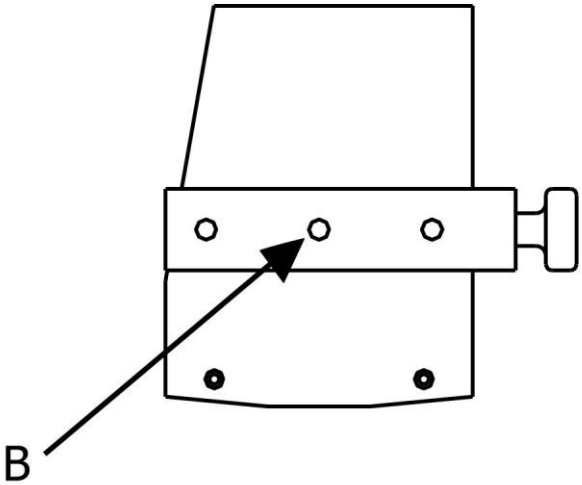


Fig 2

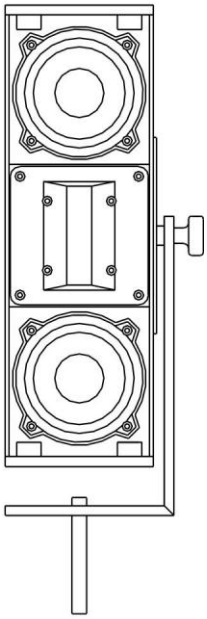


Fig 3

Attachment of the YK-i2h horizontal hanging yoke

With the i-2 lying on its side, remove the two countersunk M10 fixings in the ends of the enclosure (marked "A" in Fig 1) and put them in a safe place. Position the YK-i2h over the enclosure, insert the knurled plastic knobs into the holes and tighten securely. There are three possible positions for an attachment device – only the **central** point (marked "B") should ever be used by itself. If using the end points (marked "C"), **both** should be used to avoid unnecessary strain on the yoke.

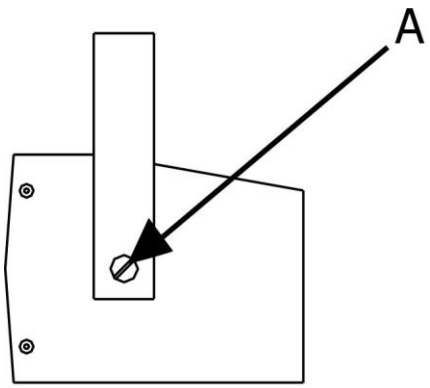


Fig 1

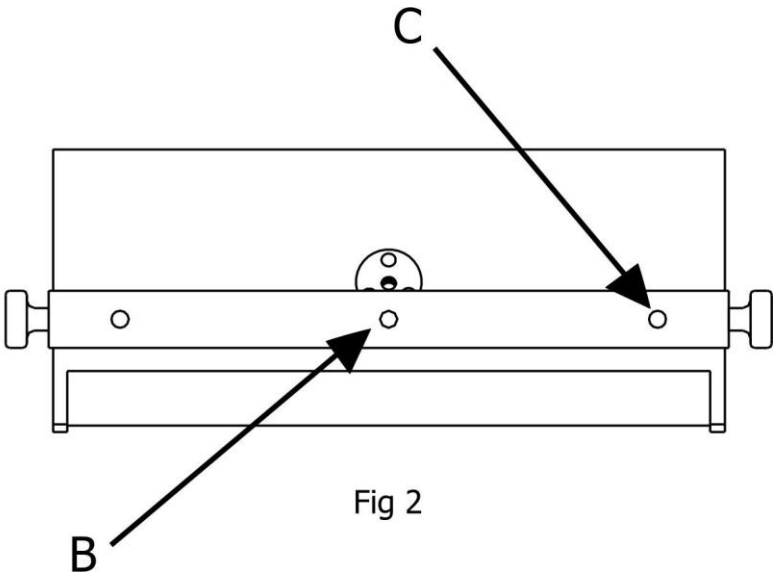


Fig 2

Attachment of Omnimount™ or Powerdrive™ Installation Brackets

It is strongly suggested that you position your loudspeakers, then mark & drill the holes in the mounting walls before you attach the bracket to the loudspeaker, as it is much easier to check positioning and fit of the holes without the weight of the loudspeaker.

The i-2 is designed to work with OmniMount™ Series 30 or PowerDrive™ Series 75 products.

Lie the enclosure on its front and remove the four M6 countersunk points on the rear of the enclosure. Position the loudspeaker-side of the bracket as required, reinstate the bolts and retighten. The bracket and i-2 can now be mounted using the holes you have pre-drilled.

Safety Considerations

When utilising any suspension method, a secondary safety must be used. When using installation brackets or the YK-i2, a forged shoulder M10 eyebolt can be fitted into one of the points on the end of the enclosure, and this can be used to attach a safety. For use with the YK-i2h, use an M8 forged shoulder eyebolt in one of the M8 points on the sides.

MAINTENANCE

Your EM Acoustics loudspeakers have been rigorously tested before they leave our factory, to ensure that they give you a lifetime of flawless operation. Should any of your drive units fail and need replacing, please follow the guidelines below.

i-2: LF/MF Drive Units

1. Using a 2.5mm Allen key, remove the four countersunk machine screws that hold the front grille in place. Lift the grille clear, ensuring that you collect the four screws for reinstatement after service.
2. Using a 3mm Allen key, remove the four socket-head screws holding the drive unit. Lift the drive unit out of the enclosure (you may need a flat bladed screwdriver to lift the driver up) and carefully disconnect the cables, ensuring to collect the washers for future reinstatement.
3. To reinstate the driver, simply reverse the above procedure. Please observe the correct polarity – red cable to positive terminal, black cable to negative (LF driver) or brown cable to positive terminal, blue cable to negative (MF driver).
4. To re-attach the grille, place it in position and carefully ease the grille over the gasket attached to the woodwork. Ensure that the gasket does not get caught as it will bunch up and stick to the grille. Once the grille is firmly in position, apply pressure to the ends by the mounting points and reinstate the four countersunk screws.

i-2: HF Drive Unit

1. Remove the grille as above.
2. Using a 3mm Allen key, remove the four socket-head screws holding the drive unit. Lift the waveguide out of the enclosure (you may need a flat bladed screwdriver to lift the waveguide up) and carefully disconnect the cables, ensuring to collect the washers for future reinstatement.
3. To remove the planar wave driver from the waveguide, use a 3mm Allen key in the socket head bolts through the waveguide, and hold the M4 Nyloc nuts at the rear with a 7mm spanner.
4. To reinstate the driver, simply reverse the above procedure. Please observe the correct polarity – white cable to positive terminal, yellow cable to negative.
5. Follow the procedure outlined above to replace the front grille.

WARRANTY

Limited Warranty

This EM Acoustics loudspeaker product is warranted to the original end-user purchaser and all subsequent owners for a period of **three years** from the original date of purchase.

Warranty Coverage

This warranty covers defects in materials and workmanship. It does not include:

- Damage or failure caused by accident, misuse, neglect, abuse or modification by any person other than an authorised EM Acoustics representative.
- Damage or failure caused by operating the loudspeaker product contrary to the instructions contained within this manual.
- Damage caused during shipment.
- Claims based on any misrepresentation by the seller.
- Products which contain anything other than the original components (or EM Acoustics factory supplied spare parts).
- Products on which the serial number has been removed, altered or defaced.

Returning your EM Acoustics loudspeaker

Should your EM Acoustics loudspeaker develop a fault, please return it (freight prepaid) in its original packaging, along with proof of purchase to your local dealer or to:

EM Acoustics (Returns Department), Building 74, Dunsfold Park, Cranleigh, Surrey, GU6 8TB, UK

including a description of the suspected fault. Serial numbers must be quoted in all correspondence relating to the claim. EM Acoustics or its representatives are in no way liable for any loss or damage in transit, and hence it is recommended that the sender insure the shipment. EM Acoustics will pay for return freight should the repair be covered under warranty.

EM Acoustics' liability is to the replacement or repair (at our discretion) of any defective components, and as such are not liable for any incidental and consequential damages including (without limitation) injury to persons, damage to property or loss of use.

This warranty is exclusive and no other warranty is expressed or implied. This warranty is also in addition to – and in no way detracts from – your statutory rights as a consumer.

APPENDIX A – TECHNICAL SPECIFICATIONS

EM Acoustics operates a continuous process of research and development, and as such reserves the right to alter specifications without notice.

i-2

Enclosure Type:	compact fullrange enclosure
Dimensions (HxWxD, mm/ins):	151/5.9 x 470/18.5 x 192/7.6
Net Weight:	9kg
Frequency Response (+/- 3dB):	90Hz – 18KHz
Sensitivity:	91dB, 1W/1m
Dispersion:	90°H x 30°V (rotatable)
Drive Units:	2 x 5" (127mm) LF/MF cone drive units
	1" (25mm) exit HF compression driver on plane-wave manifold
Power Handling:	200W RMS, 400W Program
Maximum SPL:	110dB continuous, 116dB peak
Nominal Impedance:	8 ohms
Crossover:	Uniphase Internal Passive.
Connectors:	2 x Neutrik Speakon™ NL4MP
Enclosure:	15mm (5/8") Finnish Birch plywood
Rigging/Suspension:	4 x M6 threaded fittings (Omnimount/Powerdrive)
	2 x M10 threaded fixings (YK-i2h)
	2 x M8 threaded fixings (YK-i2)
	2 x 3/8" threaded fixings (microphone stand)
Grille:	Perforated steel
Options:	Colours/Weather Protection
Spares & Accessories:	DU-501 replacement LF/MF drive unit
	CD-1003 replacement HF drive unit
	RD-1003 replacement HF diaphragm
	WG-i2 replacement diecast waveguide
	RG-I2 replacement grille
	PX-I2 passive circuitry
	YK-i2 vertical hanging yoke
	YK-i2h horizontal hanging yoke